

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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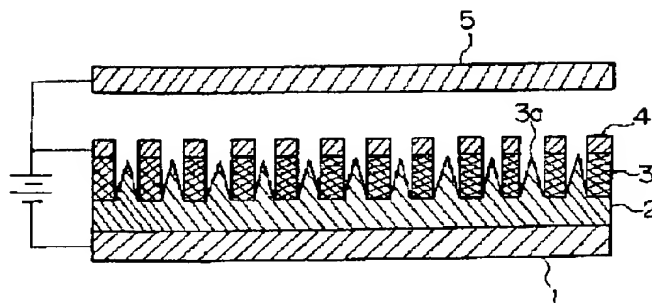
APPLICATION DATE : 08-06-92  
APPLICATION NUMBER : 04147536

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INVENTOR : SASA YOSHIYASU;

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TITLE : THERMOELECTRIC TRANSDUCER



ABSTRACT : PURPOSE: To lessen the loss due to thermal conductivity and improve productivity by setting a collector electrode on the opposite to an emitter electrode, emitting a flow of electrons to vacuum from the emitter electrode, and capturing the electrons by the collector electrode.

CONSTITUTION: A n-type semiconductor layer is formed on a metal electrode 1 and etched to form an emitter electrode 2. Further an insulating film 3 and a gate electrode 4 are successively formed on it. A collector electrode 5 is formed above the resulting layers while keeping a prescribed distance between them. Electrons emitted from the emitter electrode 2 pass the vacuum and reach the collector electrode 5. The proper distance between the emitter and the gate is several hundreds nm, and the preferable thicknesses of the insulating film 3, the emitter electrode 2, and the gate electrode 4 are 0.1-2 $\mu$ m.

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